1147-11-504 **Oliver Y. Knitter*** (oknitter@mail.sfsu.edu). *Understanding the Complexity of the Domain of Approximation of a Rational Tuple.* Preliminary report.

In continued fraction theory, a convergent is an irreducible rational number that "best" approximates a particular real number when compared to all rationals of smaller denominator. Generalizing this definition to include rational tuples of arbitrary length d shows that every point in $\mathbb{Q}^d$ determines a domain of approximation: the set of all points in $\mathbb{R}^d$ that are best approximated by this particular rational. It is known that the domain of approximation is star-convex and rectilinear. We shall examine the geometric properties of a carefully constructed set of sheared lattices in order to characterize the "corner points" of the domain of approximation, with a particular emphasis placed on identifying "primary" corners. The goal of this work is to show that for any 2-tuple $(\frac{p_1}{q}, \frac{p_2}{q}) \in \mathbb{Q}^2$, the number of primary corners in its corresponding domain of approximation is $O(\log q)$. (Received January 25, 2019)